

SEVENTH BIENNIAL WORKSHOP ON RESEARCH WITHIN THE GULF OF THE FARALLONES

***San Francisco, CA
February, 11 2004***

Preface

The Gulf of the Farallones National Marine Sanctuary (GFNMS) is pleased to convene a multidisciplinary workshop on research within the Gulf of the Farallones and adjacent waters. This year we emphasize the need for increased data and information about marine resource management, the integration of biological observations, habitat typing and regional ocean observing systems, fisheries management, marine conservation programs, bay and estuarine research and monitoring, coastal and watershed assessment, and offshore and pelagic community assessment. Our goal is to increase our understanding and protection of the marine and nearshore ecosystems, as well as to increase people's awareness of our marine resources, because it is this understanding that will lead to improvement of the marine environment.

Abstract requests were sent to over 600 researchers and marine educators, private organizations, schools, and public agencies known to be investigating or educating the public about the ecosystem within the Gulf. This year we received over 70 abstracts from a broad range of disciplines: 3 geography and mapping, 4 marine botany, 30 marine ecology and biology, 4 marine education, 5 oceanography, 11 marine ornithology, and 14 resource management. The Workshop is an opportunity for local managers, researchers, and educators to meet people working in other disciplines and to increase communication and collaboration between researchers, managers, policy makers, and the public. We hope you take this opportunity to discuss sharing field expenses, equipment, ship time, and data.

The abstracts in this Proceedings, include projects recently completed, in-progress reports, and projects planned to begin in the near future. The abstracts were not peer reviewed and we hope that you use this forum to critique and contribute to each other's work. Several investigators were not able to attend the workshop, but their abstracts are included in the Proceedings. If you did not receive an announcement of the workshop and wish to be added to the GFNMS research mailing list or if you have comments on this or future research workshops, please submit written suggestions to Jan Roletto, GFNMS, Fort Mason, Building 201, San Francisco, 94123, or e-mail Jan.Roletto@noaa.gov.

During the summer 2002, we began to update our management plan, jointly with Cordell Bank National Marine Sanctuary (CBNMS) and Monterey Bay National Marine Sanctuary. We also established a Sanctuary Advisory Council for GFNMS. The Council allows us to better communicate with non-governmental agencies and is an avenue for involving the public in the development of our management plan. The draft Management Plan focuses on issues such as invasive species, water quality, increasing our understanding of sensitive species and habitats, reducing chronic oil pollution and wildlife disturbance, as well as communicating issues and solutions to our constituents and policy makers. A schedule of the meetings for the Management Plan Review process is included in the Proceedings. For more information on the Sanctuary Council, the Management Plan Review process, or future meetings, see our web sites at:

GFNMS web site - <http://www.gfnms.nos.noaa.gov/>
Management Plan web site - <http://www.sanctuaries.nos.noaa.gov/jointplan/jointplan.html>

Future research and monitoring activities within the Gulf of the Farallones appear bright. Our funding level has slightly increased this fiscal year (FY 04). The GFNMS and CBNMS staff have developed and implemented several long-term monitoring programs, which continue to be a priority: rocky intertidal monitoring, shoreline monitoring, wildlife disturbance reduction and monitoring, offshore ecosystem assessment, and restoration projects. These programs are integrated and enhanced in our draft Management Plan. The visibility of the Sanctuary Program has increased over the past several years due to the success of our shoreline monitoring program, Beach Watch, development of our web site, and our annual State of the Sanctuary report. Through our management plan, we have identified partnerships for monitoring and outreach programs that will increase stewardship and protection. We expect to focus on developing new partnerships and strengthening established ones with government and non-government institutions who share an active interest in conserving marine resources and habitats.

Through the Management Plan Review process, the National Centers for Coastal Ocean Service (NCCOS) and our Coastal Services Center developed an ArcView database of current and historic data. Over the next two years NCCOS will continue to populate the database with recently acquired seabird and marine mammal information. We have also developed an on-line data entry system for our Beach Watch survey data. The Beach Watch and offshore biological observations data will be integrated with an ArcView geographical information system and the future Sanctuaries Hazardous Incident Emergency Logistics Database System (SHIELDS). The SHIELDS program will allow for near real-time mapping of sensitive species detected during surveys and will increase access to this information during emergency response events.

We thank the staffs of the GFNMS, CBNMS, and the Farallones Marine Sanctuary Association for their help with organizing the Workshop and soliciting donations for the Workshop: Susan Andres, Maria Brown, Michael Carver, Dru Devlin, April Dewitt, Jamie Hall, Jacqui Hiltermann, Adam Hinterthuer, Dan Howard, Ruth Howell, Harriet Lew, Joanne Mohr, Emma Moore, Joe Mortenson, Judith Novak, Shannon Lyday, Carol Preston, Jennifer Saltzman, Mary Jane Schramm, Jennifer Stock, Sage Tezak, Meredith Thomas, and Anne Walton. We also thank the GFNMS and FMSA volunteers who helped with audio-visual needs, reception, and clean up. Pieter Folkens designed the images on the Proceedings cover and travel mugs. Peet's Coffee and Tea provided coffee and tea service. Noah's Bagels, Rainbow Foods, and Safeway donated the morning beverages and baked goods.

Jan Roletto
GFNMS Research Coordinator

Amber Mace
Workshop Coordinator

SEVENTH BIENNIAL WORKSHOP ON RESEARCH WITHIN THE GULF OF THE FARALLONES

Oral Presentations

Coffee and Refreshments	0800 - 0830
Welcome - M. Brown	0830 - 0840
Opening Remarks - J. Roletto	0840 - 0850
<u>Marine Resource Management and Monitoring Programs - Moderator Carol Preston</u>	
City and County of San Francisco Long Term Environmental Monitoring Program in the Gulf of the Farallones, Part 1: History and Overview A. Navarret	0850 - 0900
City and County of San Francisco Long Term Environmental Monitoring Program in the Gulf of the Farallones, Part 2: Sediment and Benthic Infauna Patterns at the Edge of the Sanctuary M. G. Kellogg	0900 - 0910
Wildlife Operations and Adaptations of Traditional Incident Command (or ICS) Structure to Address Areas of Special Significance: A Case Study of the SS <i>Jacob Luckenbach</i> and the Gulf of the Farallones National Marine Sanctuary Y. Addassi, J. Buffa, M. Ziccardi, J. Yamamoto, S. Newman, K. Jennings	0910 - 0920
Upper Water Column Monitoring at the San Francisco Deep Ocean Disposal Site (SF-DODS) 1996-2001: Six Years of Data on Hydrography, Chlorophyll, Nutrients, Euphausiids, and Fish Larvae West of the Gulf of the Farallones National Marine Sanctuary M. F. McGowan	0920 - 0930
MARINe – The Multi-Agency Rocky Intertidal Network A Long-Term Partnership That Works M. E. Dunaway	0930 - 0940
Inventory of Point Reyes National Marine Sanctuary S. G. Allen, D. Adams, D. Schirokauer, and B. Becker*	0940 - 0950
Tomales Bay Biodiversity Inventory B. Becker, D. George, C. Anastasia, and G. Knoblock	0950 - 1000
An Introduction to the Central California Ocean Observing System (CenCOOS) S. Watson	1000 - 1010

The SIMoN Website as a Tool for Sharing Monitoring Information J. Pederson	1010 - 1020
<i>BREAK</i>	1020 - 1040
<u>Marine Resource Management, Fisheries Management, and Marine Conservation Programs - Moderator Mary Jane Schramm</u>	
Joint Management Plan Review A. Walton and R. Howell*	1040 - 1050
Current Issues Facing Our Sanctuaries: The Science and Politics of Sound Stewardship of Marine Ecosystems R. Charter	1050 - 1100
Racing for Crabs: Management Options in California's Commercial Dungeness Crab Fishery C. M. Dewees, K. Sortais, M. J. Krachey, S. C. Hackett, and D. G. Hankin	1100 - 1110
The Potential for Sea Otters to Drown in Dungeness Crab Traps and a Possible Solution J. Ames, B. Hatfield, and A. Johnson	1110 - 1120
Identifying Priority Conservation Areas for the Baja California to Bering Sea Region L. Morgan	1120 - 1130
<u>Bay and Estuarine Research and Monitoring</u>	
Comparing Effects of Native and Introduced Cordgrass (<i>Spartina</i> spp.) on Tidal Marsh Invertebrates E. D. Brusati and E. D. Grosholz	1130 - 1140
Preliminary Results for the 2003 Invasive <i>Spartina</i> Monitoring Program K. Zaremba	1140 - 1150
Implications of Genetic Diversity in Eelgrass (<i>Zostera marina</i>) for Ecological Function A. R. Hughes	1150 - 1200
Restoration of Native Oyster Populations in Tomales Bay T. Grosholz, P. Olin, D. Kimbro, and A. Baukus	1200 - 1210
The Role of the Native California Oyster (<i>Ostreola conchaphila</i>) as a Foundation Species and Factors Limiting Its Current Distribution in Tomales Bay D. Kimbro, A. Baukus, and E. Grosholz	1210 - 1220
Survey Activities for the Tidewater Goby (<i>Eucyclogobius newberryi</i>) in Tomales Bay D. Fong, T. Moore, and R. Watanabe	1220 - 1230
<i>LUNCH</i>	1230 - 1400

Poster Session (During Lunch) 1330 - 1400

**Bay and Estuarine Research and Monitoring- Continued- Moderator
Jennifer Saltzman**

Foraging Ecology and Demography of the California Least Tern (*Sterna antillarum browni*) in San Francisco Bay 1400 - 1410
M. L. Elliott, B. L. Saenz, A. Zoidis, and W. J. Sydeman

Influence of Re-Establishing Tidal Circulation on Inlet Geometry, Tidal Prism and Avian Use in Livermore Marsh, Tomales Bay, California 1410 - 1420
K. Etienne, L. Hammack, E. Blustein, and J. P. Kelly

Coastal and Watershed Research and Monitoring

Comparison of Biodiversity Patterns Among Rocky Intertidal Communities 1420 - 1430
K. E. Kusic, P. T. Raimondi, A. Kendall, D. Lohse, E. Maloney, M. Williams, and M. Wilson

Predator Diversity and Trophic Cascades in Kelp Bed Ecosystems 1430 - 1440
J. Byrnes, J. Stachowicz, S. Olyarnik, C. Thornber, R. Hughues, and K. Hultgren

Determining the Geographic Distribution of the WS-RLP, the Causative Agent of Withering Syndrome in Wild Abalone Within the Gulf of the Farallones National Marine Sanctuary 1440 - 1450
T. T. Robbins and J. D. Moore

On the Limits of Existence: Status of Marbled Murrelets in Sonoma and Marin Counties 1450 - 1500
C. Strong

Marine Bird Responses to the 2002/2003 El Niño 'Lite' and the 1998-1999 Regime Shift 1500 - 1510
P. Warzybok, R. Bradley, and W. J. Sydeman

Population Trends of Brandt's Cormorants in the Gulf of the Farallones, California, 1985-2002 1510 - 1520
G. J. McChesney, T. B. Poitras, H. R. Carter, M. W. Parker, and P. J. Capitolo

Offshore and Pelagic Community Assessment and Monitoring

Habitat Characterization and Biological Monitoring of Cordell Bank 1520 - 1530
D. Howard, D. Roberts, and T. Anderson

Side-Scanning Sonar Mapping Along the Fanny Shoals Area, Northern Part of the Farallon Islands 1530 - 1540
R. J. Anima and J. L. Chin

What Can We Learn About Monterey Bay and Beyond, from an 82-Year Record of Sea Surface Temperature from Pacific Grove? 1540 - 1550
L. Breaker

Where and Why Does Upwelling Occur? Two Mechanisms Compared North of Pt. Reyes E. Dever, C. Dorman, and J. Largier	1550 - 1600
BREAK	1600 - 1620
<u>Offshore and Pelagic Community Assessment and Monitoring Continued- Moderator- Dan Howard</u>	
Aerial Surveys of Marine Birds and Mammals in Central California L. Henkel, W. B. Tyler, J. Davis, B. Keitt, and T. Hoff	1620 - 1630
Harbor Porpoise Population Structure and Abundance in Central California K. Forney	1630 - 1640
Ten Years of California Sea Lion (<i>Zalophus californianus</i>) Strandings Along the Central and Northern California Coast: Changes in Disease Prevalence 1991-2000 D. Greig, F. Gulland, and C. Kreuder	1640 - 1650
Current Studies on Diseases of California Sea Lions (<i>Zalophus californianus</i>) Stranding Along the Central California Coast F. Gulland	1650 - 1700
Abundance, Trends, Population Structure and Movements of Humpback Off California and in the North Pacific J. Calambokidis, T. Chandler, K. Rasmussen, L. Schlender, and G. H. Steiger	1700 - 1710
Population Status and Underwater Behavior of Blue Whales Determined Through Photo-ID and Suction-Cup Attached Tags J. Calambokidis, J. Francis, M. Bakhtiari, G. Marshall, M. McDonald, B. Burgess, E. Oleson, and J. Hildebrand	1710 - 1720
An Initial View of the Global Stock Structure of Blue Whales (<i>Balaenoptera musculus</i>) Based on Nuclear Genetic Variation C. Conway, L. Lyons, R. Sears, J. Calambokidis, N. Kanda, and B. May	1720 - 1730
Occurrence of Leatherback Sea Turtles off the Coast of Central California S. Benson, P. Dutton, and S. Eckert	1730 - 1740
<u>The GENMS Visitor Center will be open. please join there to decompress after the workshop and beat the traffic.</u>	1800 - 1900

*Indicates name of presenter

Poster Presentations

The Romberg Tiburon Center for Environmental Studies: A Center for Environmental Research, Education and Community Outreach

A. Arp

Linking Indicators of Stress with Reproductive Impairment of Crabs in West Coast Wetlands

A. Briden, E. Fairbairn, S. Walsh, T. Visintainer, L. R. Judah, S. Spilseth, G. N. Cherr, and S. G. Morgan

Sex, Status and Sand: California Academy of Sciences Teen Interns Examine Trends of the Pacific Mole Crab (*Emerita analoga*) at Ocean Beach, San Francisco

J. Chu, A. Conrad-Saydah, F. Alfaro, S. Cohen, B. Kwan-Leong, D. Masters, and R. Tom

Mortality of Northern Fulmar (*Fulmarus glacialis*) in California During October 2003

J. T. Harvey, H. M. Nevins¹, S. Hatch, J. Adams, J. Hill, J. Ames, J. Parkin, K. Newton, and T. Hass

Environmental Impact of a Submarine Cable: Case Study of the ATOC/ Pioneer Seamount Cable

I. Kogan, C. K. Paull, L. Kuhnz, S. von Thun, E. Burton, H. G. Greene, and J. P. Barry

San Francisco Bay National Estuarine Research Reserve

J. C. Kooser

Inter- and Intra-Annual Patterns of Phytoplankton Assemblages During Upwelling Events off the Coast of Northern California

A. M. Lassiter, F. P. Wilkerson, V. E. Hogue, and A. Marchi

Occurrences of Selected Habitat Forming Deep-Sea Corals

L. Morgan

The SIMoN Website as a Resource for Marine Educators

J. Pederson, C. King, and S. Smith.

Seabirds in an Estuarine Environment: The Story on Alcatraz Island, California

B. L. Saenz, D. A. Gardner, J. A. Thayer, W. J. Sydeman, and D. A. Hatch

Sustainable Seas Student Intertidal Monitoring Project at Duxbury Reef in Bolinas, CA

K. Soave, J. Saltzman, H. Begley, H. Bassett, M. Hester, L. Mann, J. Scott and T. Ulrich

The California Center for Ocean Science Education Excellence (COSEE): Engaging Ocean Science Researchers in K-14 Education

C. Strang

Additional Abstracts Not Presented

Population Trends and Species Distributions of Top-Trophic Marine Vertebrates in the Central California Current 1985-2005

D. Ainley, L. Spear, and C. Keiper

Larval Retention Zones at Headlands: How Do They Influence Onshore Populations?

L. Akins

The Partnership for Interdisciplinary Studies of Coastal Oceans

M. Carr and P. Raimondi

The CSU Center for Integrative Coastal Observation, Research and Education (CI-CORE)

Kenneth Coale, Toby Garfield and the individual institution CI-CORE investigators

Marine Resource Assessment at the Fitzgerald Marine Reserve: Creating a Geographic Information System

A. DeMare

State and Federal Monitoring and Assessment Programs of Interest to California's National Marine Sanctuaries - 2004

R. Fairey

Overview of the Current Monitoring of Harbor Seals (*Phoca vitulina richardii*) in San Francisco Bay, CA

D. Green, E. Grigg, S. Allen, and H. Markowitz

Survey of Discharges into State Water Quality Protection Areas

D. Gregorio

Reproductive Success of Brandt's Cormorants at Three Nearshore Colonies in Central California 1997-2001

N. M. Jones, M. A. Murphy, M. W. Parker, H. R. Carter, R. T. Golightly, and G. J. McChesney

ROV Invertebrate Survey of Southeast Farallon Island

K. Karpov, M. Prall¹, D. Sweetnam, A. Lauermann, and J. O'Leary

Documented Occurrences of Bird Species on Tomales Bay and a Protocol for Future Bird Species Inventories

J. P. Kelly and R. W. Stallcup

Locating Marine Reserves Based on Coastal Features: Coupling Ocean Circulation and Larval Settlement Around a Headland

A. J. Mace

Restoring Common Murre Colonies in Central California: An Update

G. J. McChesney, M. W. Parker, S. W. Kress, H. R. Carter, and R. T. Golightly

EMAP/NOAA 2003 Survey of Ecological Conditions of the Western U.S. Continental Shelf, Including Gulf of Farallones National Marine Sanctuary

W. Nelson

Ecological Impacts of Green Macroalgal Mats in Drakes Estero
D. Press

Beached Bird Surveys and Chronic Oil Pollution in Central California
J. Roletto, J. Mortenson, I. Harrauld, J. Hall, and L. Grella

Remotely Operated Vehicle Survey of Channel Islands Marine Protected Area
D. Rosen

Feeding and Behavioral Ecology of Whale Watchers with in the Gulf of the Farallones
National Marine Sanctuary
M.J. Shamm and J.R. Roos

